

LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously presented) A method for transmission of safe process information, comprising:

detecting a first process signal for identifying an event that is relevant to system safety;

detecting at least one more process signal redundantly for identifying the same event; and

converting said first and at least one more process signals to a single process signal for further system-based processing to carry out logic operations on a single-signal basis for identifying the same event,

wherein the single process signal comprises process information that indicates a fault free behavior with regard to the same event only when said first and at least one more process signals indicate a fault free behavior with regard to said event.

2. (Previously presented) The method as claimed in claim 1, wherein said redundantly detected process signals are detected in said conversion process via two or more channels, and wherein said single process signal is transmitted via one channel.

3. (Previously presented) The method as claimed in claim 1, wherein said detection process is in digital or analog form.

4. (Previously presented) The method as claimed in claim 1, wherein said conversion process is carried out to form a digital process signal.

5. (Previously presented) The method as claimed in claim 1, further comprising transmitting a 1-bit data item as the useful content of said single process signal.

6. (Previously presented) The method as claimed in claim 5, wherein said transmission of said single process signal is protected.

7. (Previously presented) The method as claimed in claim 1, wherein said single process signal has useful content, and wherein at least one check bit is attached to said useful content in response to said conversion process.

8. (Previously presented) The method as claimed in claim 7, further comprising using a CRC method to produce said at least one check bit.

9. (Previously presented) The method as claimed in claim 1, wherein said conversion process is carried out at a point in a process signal transmission path capable of being predetermined.

10. (Previously presented) The method as claimed in claim 2, wherein said single process signal is converted to two or more additional process signals that are carried via separate channels in a system output component that is capable of being predetermined.

11. (Previously presented) An apparatus for safe transmission of process signals, comprising:

a plurality of process signals being supplied on two or more channels and detected redundantly to identify the same event relevant to system safety; and

a converter for conversion of said plurality of process signals to a single process signal, said single process signal being capable of being transmitted via one channel to carry out logic operations on a single-signal basis to identify the same event, wherein said converter converts the single process signal so as to include process information that indicates a fault free behavior with regard to the same event only when said plurality of process signals indicate a fault free behavior with regard to said event.

12. (Previously presented) The apparatus as claimed in claim 11, further comprising means for system-based further processing of said single process signal.

13. (Previously presented) The apparatus as claimed in claim 12, wherein said converter has associated with it an input component, an output component, an intelligent unit, and a mechatronic unit.

14. (Previously presented) The apparatus as claimed in claim 11, wherein said converter is capable of producing a 1-bit data item.

15. (Previously presented) The apparatus as claimed in claim 11, wherein said converter comprises a logic AND gate.

16. (Previously presented) The apparatus as claimed in claim 11, wherein said converter has means for protection of said single process signal.

17. (Previously presented) The apparatus as claimed in claim 16, wherein said converter has, for protection purposes, means for generation of at least one check bit and for attachment of said at least one check bit to a signal content of said single process signal.

18. (Previously presented) The apparatus as claimed in claim 11, wherein said converter is designed for application of a CRC method.

19. (Previously presented) The apparatus as claimed in claim 11, wherein said converter comprises hardware and/or software elements.

20. (Previously presented) The apparatus as claimed in claim 11, further comprising at least one network for an automation system.

21. (Canceled).